

## Emergency Management Competency 4.3

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**Competency 4.3** Emergency Management personnel shall demonstrate a working level knowledge of the process for planning, conducting, and evaluating emergency response exercises.

### 1. Supporting Knowledge and Skills

- a. Describe the process for planning emergency response exercises.
- b. Describe the process for conducting an emergency response exercise, including the "players" and "controllers" organizations and the opportunity for post-event critiques.
- c. Describe the process for internal and external evaluation of emergency response exercises, including the development or response to findings.
- d. Perform one of the following activities related to emergency drills, exercises, or events:
  - In accordance with the Emergency Management Guides, act as an evaluator or exercise controller during an exercise.
  - Serve as a member of a drill/exercise planning group.
  - Serve as a member of a scenario development group for an annual exercise.
  - Lead a drill/exercise post event critique.
  - Lead the development of and present the formal management critique as identified in the Emergency Management Guides.
  - Coordinate the writing of an exercise final report responding to objectives that were both met and not met as identified in the Emergency Management Guides.

### 2. Self-Study Activities (corresponding to the intent of the above competency)

Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	<a href="http://wastenot.inel.gov/cted/stdguido.html">http://wastenot.inel.gov/cted/stdguido.html</a>	DOE Standards, Guides, and Orders
U.S. House of Representatives	<a href="http://law.house.gov/cfr.htm">http://law.house.gov/cfr.htm</a>	Searchable Code of Federal Regulations

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**Read** the U.S. Department of Energy *Emergency Operations Drill or Exercise Evaluator Manual*, pages 1 through 47.

**Read** the U.S. Department of Energy *Guidance for Emergency Response Drills and Exercises*, pages 1 through 21.

- EXERCISE 4.3-A    Develop a simple matrix outlining the steps and describing the process for planning emergency response exercises.
- EXERCISE 4.3-B    What are the roles of the exercise coordinator, controllers, evaluators, players, and observers during an emergency response exercise?
- EXERCISE 4.3-C    Briefly describe the elements of a full-participation exercise package.
- EXERCISE 4.3-D    What is the time frame required for approval of an exercise package by DOE Headquarters (HQ)? Who approves it?
- EXERCISE 4.3-E    How should scenario information, data, and evidence be presented to the players during an emergency response exercise?
- EXERCISE 4.3-F    How should the controller proceed if the player(s) “defeat” the scenario (or scenario components) prematurely?
- EXERCISE 4.3-G    Explain the purpose of the post-exercise critique and identify the key points covered.
- EXERCISE 4.3-H    Who attends the management critique, and what is addressed in this session?

### 3. Summary

Drills and exercises are key elements of DOE emergency management programs. Drills provide hands-on training for specific aspects of facility operation or emergency response. Exercises are the means by which the integrated, overall emergency response capability identified in emergency plans is demonstrated and evaluated.

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An exercise is a comprehensive performance test of the integrated capability of most aspects in the site/facility emergency management program. Exercises test the adequacy and effectiveness of the following elements:

- Organizational command and control
- Implementation procedures
- Notification and communication networks
- Emergency equipment
- Response organization personnel performance
- The overall emergency response program performance

Exercises must be designed and conducted for maximum realism and attempt to duplicate the sense of stress inherent in an actual emergency situation.

### 4. Exercise Solutions

EXERCISE 4.3-A    Develop a simple matrix outlining the steps and describing the process for planning emergency response exercises.

ANSWER 4.3-A    The following table offers an overall planning process:

The Planning Process for Emergency Response Exercises	
Step	Description
Develop and annually update an ERAP to cover a five-fiscal-year period in accordance with DOE Order 5500.10.	<p>Five-year (long-range) planning includes the following:</p> <ul style="list-style-type: none"><li>• General schedule, scope, and objectives of drills and exercises over the multiyear period</li><li>• Provisions for demonstrating all aspects of the emergency program in a logical manner</li><li>• Provisions for drills with sufficient scope and frequency to ensure the training and maintenance of proficiency of emergency response personnel.</li></ul> <p>Fiscal-year (short-range) planning includes the following:</p> <ul style="list-style-type: none"><li>• Scope, specific objectives, identification of participants, and a schedule of the major tasks and activities associated with the current year's exercises and drills</li><li>• Confirmation or modification of the planned scope, development of detailed objectives, commitment of participants and resources, and identification and scheduling of the various activities</li></ul>

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The Planning Process for Emergency Response Exercises	
Step	Description
Determine the scope, objectives, and participants of the exercise.	Identify specific predetermined objectives associated with the testing of all elements of the emergency management program. <ul style="list-style-type: none"><li>• Participants consist of players, controllers, evaluators, and observers.</li></ul>
Establish safety and scenario development guidelines.	The safety of personnel and the facility is paramount during exercises. All participants must comply with standard safety rules and practices.
Identify budget requirements.	Resources are committed in the fiscal-year (short-term) plan.
Develop and review the scenario.	Development of an exercise is an iterative process involving several steps: <ol style="list-style-type: none"><li>1. The initial step is development of general scenario guidelines by the exercise planning group as part of the planning process. These guidelines should address issues of exercise scope and duration, participants, objectives, administrative and logistic considerations, and operational or technical constraints.</li><li>2. The next step is development of a scenario outline by the exercise coordinator and several of the more experienced members of the scenario development group. The outline should be a sequential listing of the key operational, technical, and logistic events comprising the scenario and the approximate timing of these events.</li><li>3. Subsequent steps involve refinement of the time line of key events, development of the detailed scenario information, and preparation of the injects or specific exercise messages and data.</li></ol>
Arrange logistics support and organize/schedule administrative activities.	The planning and management of exercises should include provisions for adequate logistics support, with specific attention directed toward arrangements for transportation, food, shelter, medical care, and equipment and materials that are not readily available.

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EXERCISE 4.3-B What are the roles of the exercise coordinator, controllers, evaluators, players, and observers during an emergency response exercise?

ANSWER 4.3-B

Roles During an Emergency Response Exercise	
Position	Description
Exercise Coordinator	Is responsible for the safe conduct, coordination, continuity, evaluation, and critique of the drill or exercise
Controllers	<ul style="list-style-type: none"><li>• Facilitate the conduct of the exercise by providing scenario information to players</li><li>• Allow freedom of player decisions</li><li>• Preclude player decisions and control actions that may compromise the safety or security of the facility, personnel, or equipment</li></ul>
Evaluators	Observe, evaluate, and document the performance of the players and the activities within their areas of responsibility.
Players	Respond during the drill or exercise in accordance with operational procedures and/or emergency plan implementing procedures as if the exercise information is real.
Observers	Appear to be nonparticipants to the players. Observers should not contribute information or opinions to players in any fashion.

EXERCISE 4.3-C Briefly describe the elements of a full-participation exercise package.

ANSWER 4.3-C The exercise package should include the following information:

- Scope and purpose
- Specific objectives to be demonstrated
- Participants: players, controllers, evaluators, and observers
- Safety and security information, including criteria for exercise termination

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- Administrative and logistics information, such as a schedule of activities, a method for identification of the participants, identification of organizations and activities to be simulated, provisions for telephone/radio communication among controllers, and special arrangements for food and transportation
- Rules of conduct for players and observers
- Detailed instructions for controllers and evaluators
- Evaluation criteria
- Narrative summary of the scenario events (to include initial facility conditions and assumptions used to develop the scenario data)
- Time line of key scenario events and anticipated response actions
- Master scenario events list (MSEL) of scenario messages for dissemination to the players and corresponding time-specific information for the controllers/evaluators
- Maps, diagrams, schematics, and/or data tables that provide scenario information additional to the messages
- Glossary of acronyms

EXERCISE 4.3-D    What is the time frame required for approval of an exercise package by DOE HQ? Who approves it?

ANSWER 4.3-D    The exercise package must be submitted 45 days in advance of the exercise. The DEO approves the exercise package.

EXERCISE 4.3-E    How should scenario information, data, and evidence be presented to the players during an emergency response exercise?

ANSWER 4.3-E    Scenario information, data, and evidence should be presented to the players as it would be found, measured, or indicated, with a maximum of realism. For authenticity, and wherever possible, data sheets, recorder charts, and instrument output information should be provided in the scenario. Liquids, solids, and other “stage” props should be used to provide visual evidence as appropriate. If possible, the event should appear to the players as if it is actually occurring.

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EXERCISE 4.3-F How should the controller proceed if the player(s) “defeat” the scenario (or scenario components) prematurely?

ANSWER 4.3-F The controller should have a contingency message or “inject” in the event that this occurs. The controller should disallow player actions if it will impact the objective of the exercise.

EXERCISE 4.3-G Explain the purpose of the post-exercise critique and identify the key points covered.

ANSWER 4.3-G The purpose of a critique is to provide a forum in which all aspects (positive and negative) of the exercise are discussed among the participants, which results in identification of “lessons learned” for improving the capability for response to an emergency.

Critiques should include the following:

- A review of scenario events
- Identification of shortcomings in the scenario or drill/exercise conduct
- Analysis of expected and actual player actions
- Assessment of player performance
- Adequacy of procedures and other documentation
- Adequacy of facilities and equipment

EXERCISE 4.3-H Who attends the management critique, and what is addressed in this session?

ANSWER 4.3-H The management-level critique should be attended by site management and all key players, including the controllers and evaluators. This session covers overall performance, strengths, deficiencies, and recommended improvements. Deficiencies, weaknesses, and improvement items should be documented to facilitate tracking and resolution of issues and changes to the emergency management program.